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Claims

1. A tissue implant device configured to resist migration in tissue comprising a flexible helical spring having at least one barb that engages surrounding tissue.

2. An implant as defined in claim 1 wherein the at least one barb is proximally facing.

3. The implant as defined in claim 1 wherein the barb faces radially outward from the spring.

4. An implant as defined in claim 1 wherein the barb has a rounded contour.

5. An implant as defined in claim 1 wherein the at least one barb has a sharpened point configured for engaging tissue.

6. An implant as defined in claim 1 wherein the helical spring is formed from a filament having a rectangular cross-sectional profile.

7. An implant device as defined in claim 6 wherein the helical spring comprises a plurality of coils, each having a proximally facing edge along which is formed a plurality of barbs.

8. An implant as defined in claim 1 wherein the spring is formed from a plurality of materials each having different moduli of elasticity.

9. An implant as defined in claim 1 wherein the spring is formed from metal.

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10. An implant as defined in claim 9 wherein the metallic material is stainless steel.

11. An implant as defined in claim 1 wherein the moduli of elasticity of the spring varies along its length.

12. An implant as defined in claim 1 wherein the spring is formed from a filament that has been etched from a flat sheet of material and wound into a spring configuration.

13. An implant as defined in claim 12 wherein at least one barb is formed into the filament during the etching process.

14. A method of forming a tissue implant device comprising:
forming a ribbon shaped form in a sheet of material by a photochemical etching process;
separating the ribbon formed from the sheet of material; and
wrapping the ribbon form into a helical coil shape, plastically deforming the ribbon so that it retains the coil shape.

15. The method as defined in claim 14 further comprising:
forming at least one barb shape on an edge of the ribbon forms so that the resultant coiled ribbon has at least one projecting barb along the edge.

16. A method as defined in claim 15 wherein at least one barb is formed along an edge that will be proximally facing after the ribbon is wrapped into a coil shape.

17. A method as defined in claim 15 wherein a plurality of barb shapes are formed along an edge of the ribbon form so that the resultant coil ribbon has a plurality of projecting barbs along one edge of the coil.

(Not varying shape
None the less shape)

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18. A method of forming a tissue implant device as defined in claim 15 further comprising forming a plurality of ribbons in a single sheet of material by photochemical etching process.